DOCUMENT RESUME

ED 423 991 PS 026 943

AUTHOR Szarkowicz, Diane Louise
TITLE The Structure of Narrative and Young Children's Understanding of False Belief.
PUB DATE 1998-07-00
NOTE 10p.; Paper presented at the Biennial International Society for the Study of Behavioural Development Meetings (15th, Berne, Switzerland, July 1-4, 1998).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Age Differences; *Audience Response; *Beliefs; Childrens Literature; Cognitive Development; Foreign Countries; Mass Media Effects; Narration; *Story Telling; Television Viewing; *Young Children

ABSTRACT

This study examined the relationship between the structure of narrative and false belief understanding in young children. A group of 109 children between 38 and 63 months were randomly assigned to one of two groups. Children in the first group watched a story on video, while children in the second group shared the same story in book format. The children also completed two traditional false belief tasks. The results indicated that the structure of the narrative was important to predicting performance, with significantly more children in the video group than in the book group demonstrating an understanding of false belief. There was no significant difference between groups in receptive language ability, or performance on second order and traditional false belief questions. Unlike many investigations of false belief understanding which have indicated that age is an important predictor, this study did not find age to be significant. (Contains 10 references.) (JPB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

The structure of narrative and young children's understanding of false belief

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Diane Louise Szarkowicz

University of Western Sydney, Macarthur
PO Box 555 Campbelltown NSW 2560
Australia

d.szarkowicz@uws.edu.au

Poster presented at the XVth Biennial International Society for the Study of Behavioural Development Meetings, Berne, Switzerland, July 1998.

Abstract

In this study the relationship between the structure of narrative and false belief understanding was examined. A group of 109 children between 38 and 63 months of age were randomly assigned into two groups. Children in the first group watched a story, from the children's television series Bananas in Pyjamas, on video, while children in the second group shared the same story in book format. Two traditional false belief tasks were also completed with all children.

The results indicated that the structure of the narrative was very important in predicting performance, with significantly more children in the video group demonstrating an understanding of false belief. However, there was no significant difference between the video and book groups in receptive language ability, or performance on second order and traditional false belief questions. Unlike many investigations of false belief understanding which have indicated that age is an important predictor, this study did not find age to be significant.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Diane Louise Szarkowicz

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

BEST COPY AVAILABLE

ED 423 991

PS 026943

Introduction

Researching theories of mind

A theory of mind enables individuals to understand the actions of others by attributing mental states to them. It is generally accepted that this understanding develops around five years of age. However, some studies (e.g. Jenkins & Astington, 1996) have indicated that the development of a theory of mind is influenced by the relationships and interactions children experience, and that even 3-year-olds can demonstrate such understanding in contexts which are familiar and relevant (e.g. Chandler & Hala, 1994).

While social contexts have been identified as being important in the development of a theory of mind, most research has been empirical, and suggests that 3-year-olds have limited understandings about the mind (e.g. Wimmer & Perner, 1983). Given that 3-year-olds have been identified deceiving others (Dunn, 1991), and using mental terms (Shatz, Wellman & Silber, 1983) in naturalistic contexts, it is possible that young children's abilities have been underestimated in many empirical studies. Indeed, many traditional tasks have been criticised for presenting contrived stories (Hinchcliffe, 1996), thereby, confounding some children's abilities to demonstrate their understanding.

The role of narrative in theory of mind tasks

The proposed relationship between social contexts and an understanding of mind has generated interest in the narratives used for tasks (e.g. Lewis, Freeman, Hagestadt & Douglas, 1994). Because humans represent and frame their lives in a narrative mode, in the context of this study, narrative is interpreted as a socially constructed form of thought for providing meaning to action (Bruner, 1986). Therefore, narrative may offer young children a familiar context, and provide support for their attempts in theory of mind tasks (Lewis et al, 1994).

Furthermore, narrative presents an audience with a dual landscape-the landscape of action reflects context, purpose and agent, while the landscape of consciousness presents the participants' mental states (Bruner, 1986). Thus, because narratives present both action and mentality, humans are able to access what individuals are thinking, believing and feeling about the actions they experience. However, if the unity between these landscapes is fractured, narrative may not present reality in a manner young children are familiar with. For example, using contrived stories may minimise the presentation of one landscape, which can evoke more interpretations of the alternate landscape (Feldman, Bruner, Renderer & Spitzer, 1990).

The current study

The aim of the current study was to investigate if children could demonstrate an understanding of false belief (understanding that individuals can hold beliefs which are mistaken), when presented with a familiar and coherent narrative. The narratives in this study were presented through a video and a book designed for preschool aged children.

It was predicted that more children would demonstrate an understanding of false belief in the video context than the book or traditional contexts. This prediction was based on the presented a more cohesive, detailed narrative.

Method

Sample

A group of 109 children (60 female, 49 male) aged from 38 months to 63 months (mean 54 months) formed the sample in the current study. All children attended the same preschool in regional Australia for either one or two days each week. Children were generally from white, middle class families.

Materials

A book and video titled *Magic Carpet* (Tulloch, 1993) (see Appendix 1) from the Bananas in Pyjamas series were used for the narrative task. The Bananas in Pyjamas are human sized characters who were very familiar to all children in the current study. They are regularly seen on children's television and in literature in the country of this study. In addition to the materials for the narrative task, the Peabody Picture Vocabulary Test-Revised (PPVT-R) was also implemented, and for the traditional false belief tasks, plastic "ice cubes", and a candle which looked like a cake.

Procedure

Prior to the collection of data, the researcher attended the preschool for two weeks to enable children to become familiar with her. The complete data collection process took three weeks, with all the interviews being completed on an individual basis in the preschool library. The PPVT-R, and ice cube traditional task were completed during the first interview. The *Magic Carpet* and candle traditional tasks were completed during the second interview. False belief questioning for both the traditional tasks followed the standard format: "What do you think this is? (Child handles item and assesses the identity of the object). What is it really?".

All children were randomly assigned to either watch the video (n = 57) or share the book (n = 52) *Magic Carpet*. Each child watched the video or shared the book twice. On the first sharing no questions were asked. At appropriate points during the second sharing, one control question, three false belief questions, and

one 2nd order false belief question were asked (see Appendix 2). Those children who did not respond correctly to the control question were excluded from the study.

Measures

All responses were coded as 1 for a correct response and 0 for an incorrect response. The three false belief questions were summed to form the narrative false belief total. The 2nd order false belief question and each of the traditional tasks were used as single measures in the analysis.

Results

PPVT-R results

The results from the PPVT-R ranged from 59 to 137 with a mean of 109 (SD 12).

False belief results

No children failed the control question, and no significant differences were identified between the book and video groups for the following variables: verbal ability $\pi(107) = .052$, $p = .821$; age $\pi(107) = .014$, $p = .907$; 2nd order false belief $\pi(107) = .968$, $p = .327$; the candle traditional task $\pi(107) = 2.093$, $p = .151$; and the ice cubes traditional task $\pi(107) = 1.984$, $p = .162$.

A significant difference was identified between the groups for the *Magic Carpet* false belief total, $\pi(107) = 93.476$, $p = .000$. Hence, as presented in Figure 1, more children were able to demonstrate an understanding of false belief in the context of the video than in the context of the book.

In the book group 56% of children were able to demonstrate an understanding of false belief on the book task. In comparison, 93% of children in the video group were able to demonstrate an understand on the video task. However, only an average of 43% of children in the video group and 55% in the book group demonstrated an understanding on the traditional tasks (See Figure 1).

Because the splits for the narrative false belief total tended towards the extremes of 1 or 3, it was felt multiple regression analysis was not appropriate. The narrative false belief total was recoded so children received 1 if they answered all three false belief questions correct, and 0 if they did not respond correctly to the three questions. Using a logistic regression analysis, the difference between the book and video contexts was explored further. As illustrated in Table 1, the context, either book or video, was the most important variable. Gender was not identified as being a significant variable.

The results from the logistic regression analysis were used to calculate the odds of a child with the mean age of 54 months and PPVT-R mean of 109 not answering the *Magic Carpet* false belief questions correctly. For the book the odds were 0.77:1, and for the video the odds were 0.05:1. Therefore, children had a

better chance of demonstrating an understanding of false belief in the context of the video than the book.

Figure 1
Number of children responding correctly to tasks by context group

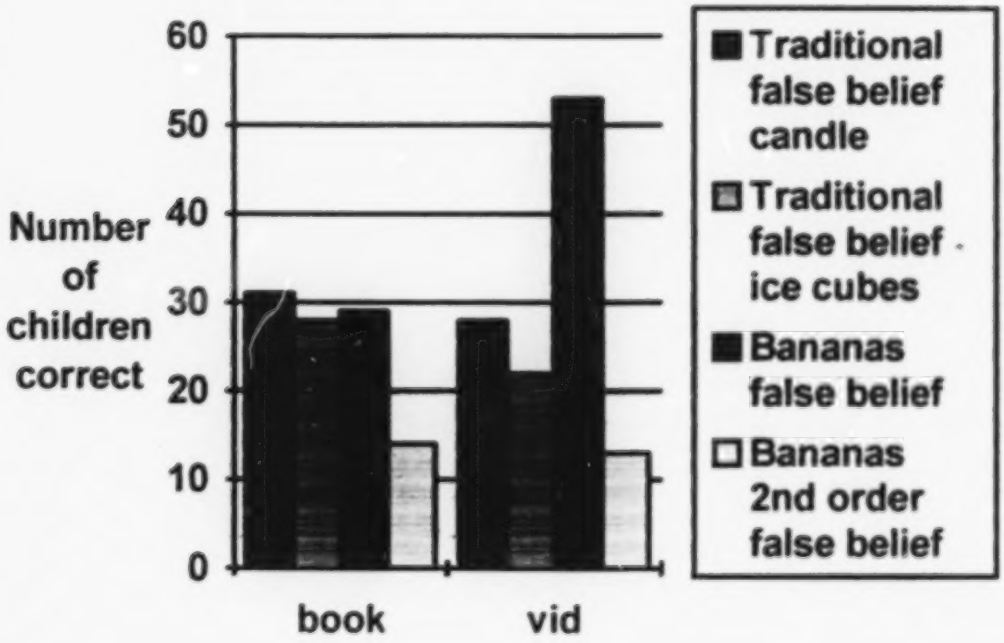

Table 1
Summary of logistic regression analysis for Magic Carpet false belief

	Regression Coeff.	S.E.	Coeff./S.E.
Context	2.828	.678	4.173
Verbal	.082	.029	2.810
Age	.109	.049	2.229
Gender	- .190	.554	- .343

Intercept	S.E.	Intercept/S.E.
-14.56941	4.780	-3.048

Pearson Goodness-of-Fit Chi Square = 95.588 DF = 104 p = .710

Discussion

In the current study more children were able to demonstrate an understanding of false belief on the video task than on the book task or the traditional false belief tasks. The performance of children in the book group on the *Magic Carpet* task was not significantly different from that on the traditional tasks.

There are a number of possible explanations for children's improved performance in the video context. Firstly, despite being the same story, the landscapes of narrative are presented differently in the video and in the book. The video clearly entwines action and mentality through the narrator who summarises the events at the conclusion of each episode. A narrator was not explicitly presented in the book.

Secondly, the video presented information through a variety of cues including body language, music and voice tonal variations. Often cues like these are used in everyday interactions to help make meaning and hence, may have assisted children in forming their own narrative for recall.

Most importantly, the video presents entire episodes, allowing children to form a cohesive narrative of each event. Previous research has found 3-year-olds can demonstrate an understanding of false belief when given the opportunity to link the events of a task into a coherent narrative (Lewis et al, 1994). In the video context children saw the beginning, middle and end of each episode, and this may have facilitated the construction of a meaningful narrative of the experience for recall.

It appears both landscapes of narrative need to be constructed coherently for young children if they are to be given an opportunity to demonstrate an understanding of the mentality which influences characters' actions. In the book and traditional false belief tasks the landscape of consciousness may not have been as explicit as the landscape of action. Consequently, children observed the action in the narrative and made this a part of their conscience. However, without receiving adequate information about the mentality in the narrative, children may have attributed their knowledge to the characters. Thus, toning down the consciousness in the narrative may have evoked more interpretations which were action based as suggested by Feldman et al (1990).

Conclusion

In summary, it appears that children need to experience both the landscapes of narrative in an explicit and balanced manner when trying to demonstrate their understanding of false belief. If both narrative landscapes are presented in a cohesive manner, as in the video context used in the current study, even 3-year-olds can demonstrate an understanding of false belief.

References

Bruner, J. (1986). *Actual minds, possible worlds.* Cambridge: Harvard University Press.

Chandler, M., & Hala, S. (1994). The role of personal involvement in the assessment of early false belief skills. In C. Lewis and P. Mitchell (Eds.), *Children's early understanding of mind: Origins and development.* Hillsdale, NJ: Erlbaum.

Dunn, J. (1991). Young children's understanding of other people: Evidence from the observations within the family. In D. Moore & C. Frye (Eds), *Children's theories of mind: Mental states and social understanding.* Hillsdale: Erlbaum.

Feldman, C. F., Bruner, J., Renderer, B., & Spitzer, S. (1990). Narrative comprehension. In B. K. Britton and A. D. Pellegrini (Eds), *Narrative thought and narrative language.* New Jersey: Lawrence Erlbaum Associates.

Hinchcliffe, V. (1996). Fairy stories and children's developing theories of mind. *International Journal of Early Years Education, 4,* 35-46.

Jenkins, J. M., & Astington, J. W. (1996). Cognitive factors and family structure associated with theory of mind development in young children. *Developmental Psychology, 32,* 70-78.

Lewis, C., Freeman. N. H., Hagestadt, C., & Douglas, H. (1994). Narrative access and production in preschoolers' false belief reasoning. *Cognitive Development, 9,* 397-424

Shatz, M., Wellman, H. M., & Silber, S. (1983). The acquisition of mental verbs: A systematic investigation of the first reference to mental state. *Cognition, 14,* 301-321.

Tulloch, R. (1993). Magic carpet. A Bananas in Pyjamas story. Sydney: ABC Books.

Wimmer, H., & Perner, J. (1983). Beliefs about beliefs: Representations and constraining function of wrong beliefs in young children's' understanding of deception. *Cognition, 13,* 103-108.

Appendix 1

Outline of the story *Magic Carpet*

Morgan saw a beautiful carpet in the Rat in the Hat's shop. The Rat said the carpet was magic and would fly, so Morgan bought the carpet straight away. He took the carpet home and tried to make it fly, but the carpet was not magic. The Bananas in Pyjamas saw Morgan's carpet would not fly and decided to trick him. They put a blindfold on Morgan and moved the carpet from side to side to make Morgan think he was flying.

Morgan then took the carpet outside and the Bananas in Pyjamas made it "fly" again. This time Amy, a teddy bear, helped by brushing leaves past Morgan's face to make him think he was flying through the trees. Morgan got scared and removed the blindfold. "You trickers," he said when he realised he had not really been flying (Tulloch, 1993).

Appendix 2

Questions for the story Magic Carpet

Control question	What was special about the carpet?
False belief	What does Morgan think he is doing? What do we know is really happening?
False belief	What does the Rat think the carpet is? What do we know is really happening?
False belief	What does the Rat think he is doing? What do we know is really happening?
2nd order false belief	What do the Bananas think the Rat thinks he is doing? What do the Bananas know the Rat is really doing?